ALEXANDRE CARMINOT

Engineering Student - Machine Learning & Medical Engineering

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EDUCATION

Master - Medical Engineering — 09/2019 - Present
EPF Engineering School Paris — Expected Graduation in 2025

- Engineering curriculum with a healthcare specialization: integrating core engineering principles, mathematics, programming, and machine learning with medical technology, device design, and healthcare informatics.

Computer Science - Exchange Program — 09/2024 - Present
Tianjin University

- Focus on Algorithmic programming, machine learning , computer vision, and applied data science

Intelligent Medical Engineering - Exchange Program — 09/2023 - 01/2024
Tianjin University

- Specialized in Precision medicine, neurosciences, brain-computer interfaces (BCI), medical imaging basics, and fundamentals of medical engineering.

SPECIALIZATION COURSES

Deep Learning and Advanced TensorFlow
DeepLearning.AI

Advanced Machine Learning on Google Cloud
Google

Advanced Medical Neuroscience
Duke University

Machine Learning Specialization
Stanford University & DeepLearning.AI

PROJECTS

BCI application - In Progress - [GitHub Link] — 10/2024-Present
Building a 24-channel Brain-Computer Interface for thought-based control:

- Processing EEG/MEG signals for classification of mental commands
- Developing ML pipelines for motor imagery and cognitive load detection
- Implementing neural signal processing for direct thought-to-action conversion

BCI Workshop - Tianjin University - [GitHub Link] — 09/2023 - 10/2023
Developed a real-time hand gesture recognition system achieving 98% accuracy using:

- Custom pattern recognition algorithms processing flexion sensor data
- Real-time classification of 6 distinct hand gestures (static & dynamic)
- Implemented signal processing pipeline for noise reduction and feature extraction

Disease Prediction Algorithm - Python - [GitHub Link] — 06/2024 - 09/2024
Self-developed an AI medical diagnostic model with 96% accuracy using 5000+ training samples:

- Engineered custom neural network with NumPy (activation functions, loss calculations)
- Benchmarked model performance against an optuna-tuned ensemble Model (XGBoost, SVM & ReLu) to ensure robustness and model reliability.
- Successfully predicts 41 diseases from 131 symptoms with 96% accuracy

EXPERIENCE

AI Model Review Specialist — 01/2024 - Present
Outlier.AI | Remote | Current

- Assess scientific, mathematical and code reasoning in AI responses, validating complex algorithms and technical explanations to enhance model precision and reliability.

Private Tutor and Esports Coach — 06/2022 - 09/2023

- Led personalized tutoring sessions in Math and Physics for 10 students, strengthening foundational skills and boosting student confidence in subject mastery.
- Customized tutoring and coaching strategies to suit individual skill levels, resulting in improved student performance

Internship — 06/2022 - 9/2022
Zen2050Maintenant — Paris

- Developed and implemented interactive exhibition stands for Zen2050's annual event, creating eco-conscious games, climate-themed art, and educational activities that engaged visitors in sustainability initiatives.

ABOUT ME

As a student of engineering and medicine, my journey is rooted in the intersection of these fields.
Focusing on machine learning and medical engineering, I am dedicated to exploring neuroscience and artificial intelligence.
This path has led me into brain-computer interfaces and neuro-engineering, where I develop AI-driven solutions bridging technology and human capability.

FIND ME ONLINE

Alexandre CARMINOT [Link]

My Portfolio [Link]
My Projects [Link]

Alexandre CARMINOT [Link]

SKILLS

Programming

Python - C++ - Java - Docker - Git

MATLAB - HTML, CSS & JavaScript

Libraries

TensorFlow - Keras - MNE - PyTorch

Scikit - Seaborn - SciPy

Technical Skills

Machine Learning - Deep Learning

DNN - CNN - NLP - LSTM

Neurosciences - Computer-Vision

Engineering Skills

Problem Solving - Innovation - Analysis

Critical thinking - Device design

LANGUAGES

French — Native, Voltaire Certification

English — Expert, TOEIC (980/990)

Spanish — Intermediate, B1

Chinese — Elementrary, HSK3

PASSIONS & HOBBIES

- Martial Arts: Taekwondo (Red Belt), Judo (Brown Belt)
- Team sports: Rugby & Soccer
- Music: Piano (Playing for seven years)
- Science: Astronomy, Cosmology, Archaeology